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Notification of Sending of Duplicate Statement of Opposition

Patent Opposition Statement No.:	Opposition 2002-72061
(Patent No.):	(Patent No. 3259686)
Draft Date:	October 9, 2002
Chief Appeals Examiner of Patent Office:	Kazuo Kutsuna
Patentee:	Murata Manufacturing Co., Ltd.

One duplicate of the statement of opposition submitted by the patent opponent is hereby sent.

There is no need to respond to the sending of this duplicate statement of opposition. If you are notified separately of reasons for the nullification of the patent, you may submit opinions and requests for amendment within the designated period.

If there are any questions regarding this notification, please contact the following [person]:
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[*Stamp*: 10/23/02, Otaru]

[*Stamp*: Duplicate]

(13,700 yen)

Patent Opposition Statement

August 23, 2002

To: Shin'ichiro Ohta, The Commissioner of the Patent Office

[*Illegible stamp*]

1. Indication of Patent Relevant to the Patent Opposition

   Patent Number: Patent No. 3259686

   Indication of Claims: Claim 1, Claim 2, Claim 3, Claim 4, and Claim 5

2. Patent Opponent

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3. Reasons for Opposition

[*Stamp*: Patent Office, 8/26/02, Application Support Section, Sato]

[*Stamp*: Opposition 2002-72061]

(1) Summary of Reasons for Opposition

Section 29 (1) (iii) of the Patent Law, Section 29 (2) of the Patent Law, Section 36 (4) of the Patent Law and Section 36 (6) (ii) of the Patent Law (Section 113 (1) (ii) of the Patent Law and Section 113 (1) (iv) of the Patent Law)

	Invention of the Present Patent	Evidence
Claim 1	A. A ceramic electronic part comprising a ceramic sintered body and a plurality of internal electrodes formed inside this ceramic sintered body, wherein B. the ceramic that constitutes the ceramic sintered body is selected so that the shrinkage rate of the ceramic during firing is greater than the shrinkage rate of the internal electrodes, C. the edges of the tip ends of the above-mentioned internal electrodes are constructed so that these edges have a wedge shape when viewed in cross section, D. L > 2t where L is the length of the above-mentioned wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape, and E. the ceramic electronic part is characterized by the above-mentioned features. (Effect) Delamination and inter-layer peeling in the ceramic sintered body are effectively suppressed.	Exhibit A-1: Japanese Patent Application Kokai No. H9-190947 (Claim 1, Paragraph 0022, Paragraph 0010, Figure 1, Paragraph 0036, Claim 4, Paragraph 0019, Paragraphs 0015 through 0018) A. The fact that [the invention] is a laminated ceramic electronic part having a structure in which internal electrodes are laminated inside a ceramic element, B. the fact that although there is no direct description [of this element], [this constituent element] is not essential as a constituent element for specifying the invention, C. the fact that thin parts that have a smaller thickness than the functional parts are disposed on the end portions of the internal electrodes, D. the fact that the length of the thin parts is more than twice the thickness of the internal electrodes, E. the fact that [the invention] is a laminated ceramic electronic part characterized by the above-mentioned features, F. the fact that thin parts are also disposed on both sides of the internal electrodes in the direction of thickness, G. the fact that [the invention] is a laminated ceramic capacitor, H. the fact that the thickness of the internal electrodes in the laminated ceramic capacitor is 3 μm, [and] I, J, K, L, M, O. the fact that a laminated ceramic capacitor manufacturing method is disclosed which is characterized by the fact that a conductive paste is printed on a ceramic green sheet so that the internal electrodes have thin parts, [this] ceramic green sheet is laminated so that a laminated body is obtained, and a ceramic sintered body is produced by firing the laminated body thus obtained. (Effect) Since thin parts that have a smaller thickness than the functional parts are formed, internal defects such as delamination caused by insufficient adhesive force can be securely prevented. Exhibit A-2: ISHM '92 PROCEEDINGS "Application of Low Temperature Fired Multilayered Substrates to High Frequency," pp. 263-268, held 19-21 October 1992 (Abstract on page 263, Photograph 4, pages 267-268) A. The fact that [the device in question] is a noise filter consisting of an LFC (low-temperature fired ceramic) and silver internal electrodes disposed in multiple layers inside this ceramic, B. the fact that although there is no direct description [of this element], [this constituent element] is not essential as a constituent element for specifying the invention, C. the fact that the edges of the tip ends of the internal electrodes are constructed so that these edges have a wedge shape when viewed in cross section, D. the fact that L > 2t where L is the length of the wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape, [and] E. the fact that [the device in question] is a noise filter having the above-mentioned characteristic features. (Effect) The fact that [the noise filter] is superior in terms of the removal of noise from the signal, and is also compact in size and superior in terms of surface mounting characteristics.
Claim 2	F. The ceramic electronic part according to Claim 1, wherein the side edges of the above-mentioned internal electrodes have a wedge shape when viewed in cross section, and L > 2t where L is the length of the above-mentioned wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape.	
Claim 3	G. The ceramic electronic part according to Claim 1 or Claim 2, wherein the above-mentioned ceramic sintered body is constructed using a dielectric ceramic, and the above-mentioned plurality of internal electrodes are laminated in the direction of thickness of the ceramic sintered body with ceramic sintered body layers interposed, so that a laminated capacitor is constructed.	

Claim 4	H. The ceramic electronic part according to any of Claims 1 through 3, wherein the thickness of the above-mentioned internal electrodes is in the range of 3 to 20 μm.	Exhibit A-3: ISHM '92 PROCEEDINGS "High Reliability Copper MCM Systems," pp. 607-612, held 19-21 October 1992 (Abstract on page 607, Figure 2 (Copper Process)) The fact that the cross-sectional shape of the copper electrodes in a crystallized dielectric is a wedge shape, and [the condition] L > 2t is satisfied. Exhibit A-4: ISHM '94 PROCEEDINGS "Multifunctional Ceramic Substrates and Packages for Telecommunication Applications," pp. 243-247, held 15-17 November 1994 (Abstract on page 243, Figure 2b) The fact that the cross-sectional shape of tungsten conductors in a ceramic substrate (MLCS) constructed from an alumina-type substrate and tungsten conductors is a wedge shape, and [the condition] L > 2t is satisfied.
Claim 5	I. A method for manufacturing a ceramic electronic part in which a plurality of internal electrodes are disposed inside a ceramic sintered body so that these internal electrodes overlap with ceramic sintered body layers interposed, wherein said method comprises: J. a step in which a conductive paste that is used to construct the internal electrodes is printed on one main surface of a ceramic green sheet, K. a step in which a plurality of ceramic green sheets on which the conductive paste has been printed and unprinted ceramic green sheets that are disposed above and below the ceramic green sheets on which the conductive paste has been printed are laminated to produce a laminated body, and L. a step in which a ceramic sintered body is produced by firing the laminated body thus obtained, N[1]. a ceramic and a conductive paste which are such that the shrinkage rate of the ceramic in the firing process is greater than the shrinkage rate of the internal electrodes are used M. as the materials constituting the above-mentioned ceramic green sheets and conductive paste, so that the ceramic moves toward the tip ends of the internal electrodes during firing, thus causing the tip ends of the internal electrodes to assume a wedge shape as viewed in cross section, and O. the electronic part manufacturing method is characterized by the above-mentioned features.	Exhibit A-5: Japanese Patent Application Kokai No. H7-142904 (Claim 34, Paragraph 0013) The fact that a dielectric laminated filter is disclosed which is integrally molded by laminating a plurality of dielectric sheets using an electrode material whose shrinkage rate during firing is smaller than that of the dielectric sheets, on these dielectric sheets. Exhibit A-6: Japanese Patent Application Kokai No. H7-297074 (Paragraph 0005 through Paragraph 0007) The fact that a laminated ceramic electronic part is disclosed in which the shrinkage rate of a ceramic sheet following pressing is increased, thus eliminating the difference in thickness between the central portion and peripheral portions of the laminated body caused by the internal electrodes, so that there are no defects such as defective lamination, delamination (inter-layer peeling) or cracking. Exhibit A-7: ISPS '97 PROCEEDINGS "A Low Temperature Co-Fire Ceramic Materials System for High Performance Commercial Applications," pp. 135-140, held 2-5 December 1997 (Abstract on page 135; page 137, left column, lines 6 through 8; Table 1) The fact that it is indicated that the firing shrinkage rate of a green sheet is generally different in the planar direction (longitudinal/lateral direction (X/Y direction)) and the direction of thickness (Z direction).

[1] Translator's note: The order of constituent elements M and N are reversed in this translation because of the grammatical difference between Japanese and English.

Main Points of Reasons

A ceramic electronic part comprising constituent element[2] A, constituent element C, constituent element D, constituent element E, constituent element F, constituent element G, constituent element H, constituent element I, constituent element J, constituent element K, constituent element L, constituent element M and constituent element O, which are constituent elements of the inventions described in Claims 1 through 5 of the present patent, and a method for manufacturing this ceramic electronic part, are described in Exhibit A-1. Furthermore, Exhibit A-1 also describes an effect which is the same as the effect of the invention described in Claim 1 [of the present patent], i.e., the fact that "delamination and inter-layer peeling in the ceramic sintered body are effectively suppressed." There is no direct description of constituent element B, which is a constituent element of the invention described in Claim 1 of the present patent; however, the invention described in Claim 1 is an "invention of a product" as a "ceramic electronic part," and this constituent element B is a limitation regarding the "shrinkage rate of the ceramic during firing," which includes a temporal element that is not essentially related to the "configuration following firing," which is the final configuration as a "product." Therefore, it is appropriate to conclude that [this constituent element B] is not essential as a constituent element for specifying the "invention of a product." This is also clear from the fact that the patentee himself claims that the judgement of an "invention of a product" should be based on the final configuration, as indicated by the statement that "Figure 1 of the cited example is in all respects a figure that shows the sectional structure of the ceramic sintered body following firing," which is found in the section of the Opinion Brief titled "(4) Detailed Reasons Why the Invention of the Present Application Could Not Easily Be Invented from the Cited Examples." In regard to constituent element N of Claim 5 as well, there is no direct description [of such a constituent element]; however, as in the case of constituent element B, it is appropriate to conclude that this constituent element is an extremely vague constituent element, and is not essential as a constituent element for specifying the invention because the causal relationship between constituent element N ("shrinkage rate") and constituent element M ("wedge shape") as constituent elements is unclear in the specification of the present patent, and also because there is no numerical support regarding the "shrinkage rate" in the "working configurations" or "embodiments," and no description of the directionality of this ["shrinkage rate"], and so on.

A ceramic electronic part comprising constituent element A, constituent element C, constituent element D and constituent element E, which are constituent elements of the invention of Claim 1 of the present patent, is described in Exhibit A-2. In regard to constituent element B ("shrinkage rate"), the situation is the same as in the case of Exhibit A-1. In particular, a ceramic electronic part in which a plurality of internal electrodes that have a "wedge shape" and that satisfy the condition $L > 2t$ are laminated is clearly shown in Photograph 4 of Exhibit A-2, and it is clear that internal electrodes having such a "wedge shape" are a technical matter that has been well known to persons skilled in the art from the time that the application for the present patent was filed, regardless of whether or not the "shrinkage rate" is taken into account.

Accordingly, since the inventions of Claims 1 through 5 of the present patent are substantially the same inventions as the inventions respectively described in Exhibit A-1 and Exhibit A-2, these inventions are subject to Section 29 (1) (iii) of the Patent Law, and cannot be patented.

Exhibit A-3 and Exhibit A-4 clearly describe internal electrodes which are used in a ceramic electronic part (which is the same technical field as that of the invention of the present patent), and which have a "wedge shape" and satisfy the condition $L > 2t$ (i.e., which comprise constituent element C and constituent element D). It is clear that as in the case of Exhibit A-2, internal electrodes that have such a "wedge" shape are [a technical matter that] has been well known to persons skilled in the art from the time that the application for the present patent was filed.

Furthermore, a dielectric laminated filter using internal electrodes that have a smaller shrinkage rate during firing than the dielectric sheet, and a laminated ceramic electronic part which uses a ceramic sheet whose shrinkage rate following pressing is increased, and which is free of defects such as delamination are respectively described in Exhibit A-5 and Exhibit A-6. Thus, it is clear that consideration of the "shrinkage rate" between the ceramic and internal electrodes in a ceramic electronic part is a technical matter that has been well known to persons skilled in the art from the time that the application for the present patent was filed.

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[2] Translator's note: In the Japanese source document, the terms "constituent element" and "constituent" (or "construction") are both used clearly to mean "constituent element." To avoid confusion, we have used the term "constituent element" consistently in both cases throughout this translation.

Main Points of Reasons

Accordingly, the inventions of Claims 1 through 5 of the present patent are also inventions that could easily have been invented by a person possessing ordinary knowledge of the technical field to which the inventions belong on the basis of the inventions respectively described in Exhibit A-1 and Exhibit A-2 if Exhibit A-3 through Exhibit A-6 were [also] taken into account. These inventions are therefore subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

While the invention of Claim 1 of the present patent is an "invention of a product" as a "ceramic electronic part," constituent element B, which is [one of] the constituent elements of this invention, has essentially no relationship to the "configuration following firing," which is the final configuration [of the invention] as a "product;" the "shrinkage rate of the ceramic during firing," which is merely a temporal element, is included in this constituent element, and is extremely unclear.

Furthermore, the "selection of the shrinkage rate" which constitutes this is not clearly or sufficiently described in the specification of the present patent; accordingly, this is extremely unclear. Specifically, in the patent specification, the causal relationship between constituent element B (constituent element N) ("shrinkage rate") and constituent element C (constituent element M) ("wedge shape") (i.e., the question of whether it is sufficient for the internal electrodes to have a "wedge shape" in order to manifest the effect [of the invention] as an "invention of a product," or whether the condition of the "shrinkage rate" must also be satisfied, and the question what type of relationship exists between these two constituent elements) is unclear (in the section titled "Effect of the Invention" in paragraph 0045 of the specification of the present patent, it is indicated that it is sufficient if the shape of the internal electrodes is a "wedge shape," regardless of the "shrinkage rate"). Furthermore, in regard to the "shrinkage rate," absolutely no backing in terms of numerical values is given in the "working configurations" or "embodiments," and there is absolutely no description of the directionality of this "shrinkage rate" (as is indicated in Exhibit A-7, the "shrinkage rate" generally differs in the planar direction (longitudinal/lateral direction (X/Y direction)) and the direction of thickness (Z direction); accordingly, the "shrinkage rate" in constituent element B, for which no directionality is specified, is an extremely vague and meaningless limitation). In paragraph 0026 of the specification of the present patent, only two examples are cited as methods for making the shrinkage rate of the ceramic greater than the shrinkage rate of the internal electrodes, and there is no concrete description whatsoever regarding "shrinkage rate" as the specification of an entity in an "invention of a product" (e.g., a description in terms of numerical values or a description regarding measurement methods, etc.). Moreover, the examples are both merely methods for adjusting the conductive paste that forms the internal electrodes; in regard to the "ceramic," only one example relating to the low-temperature sintering ceramic is described. Furthermore, considering the meaning of the description in paragraph 0028 stating that "of course, the adjustment of the composition of the above-mentioned internal electrodes is selected in accordance with the shrinkage rate of the ceramic used, ...," in order to consider the relative magnitudes of the "shrinkage rates" of the ceramic and internal electrodes by comparing these rates, there must be a concrete description of numerical values or measurement methods, etc., in regard to the "shrinkage rate of the ceramic" itself, which serves as a standard in cases where the composition of the internal electrodes is adjusted. However, in the specification of the present patent, there is absolutely no concrete description of the "shrinkage rate of the ceramic" itself, so that this is extremely unclear in terms of specifying the invention or working the invention.

Accordingly, the invention of Claim 1 of the present patent does not satisfy the conditions stipulated in the Patent Law, Section 36 (4) and (6) (ii), and therefore cannot be patented.

Consequently, the inventions of Claims 1 through 5 of the present patent should be nullified in accordance with the provisions of Section 113 (1) (ii) of the Patent Law and Section 113 (1) (iv) of the Patent Law.

(2) History of Procedure

Filing Date:	July 27, 1998 (Patent Application No. H10-211235)
Registration Date:	December 14, 2001
Gazette Issue Date:	February 25, 2002 (Patent No. 3259686)

(3) Grounds for Opposition

▶ The inventions of Claims 1 through 5 of the present patent are respectively substantially the same as the inventions described in Exhibit A-1 and Exhibit A-2, which were publicly known prior to the filing of the application of the present patent. Accordingly, these inventions are subject to the provisions of Section 29 (1) (iii) of the Patent Law, and cannot be patented.

▶ If Exhibit A-3 through Exhibit A-6 are taken into account, the inventions of Claims 1 through 5 of the present patent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which the inventions belong based on the inventions respectively described in Exhibit A-1 and Exhibit A-2. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

▶ The invention of Claim 1 of the present patent does not satisfy the conditions stipulated in Section 36 (4) of the Patent Law and Section 36 (6) (ii) of the Patent Law. Accordingly, this invention cannot be patented.

(4) Concrete Reasons

a. Invention of the Present Patent

Judging from the description of the specification and figures submitted at the time that the patent was examined, the gist of the invention of the present patent consists of the following items described in the claims:

"(Claim 1)

A. A ceramic electronic part comprising a ceramic sintered body and a plurality of internal electrodes formed inside this ceramic sintered body, wherein
B. the ceramic that constitutes the ceramic sintered body is selected so that the shrinkage rate of the ceramic during firing is greater than the shrinkage rate of the internal electrodes,
C. the edges of the tip ends of the above-mentioned internal electrodes are constructed so that these edges have a wedge shape when viewed in cross section,
D. $L > 2t$ where L is the length of the above-mentioned wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape, and
E. the ceramic electronic part is characterized by the above-mentioned features.

(Claim 2)

F. The ceramic electronic part according to Claim 1, wherein the side edges of the above-mentioned internal electrodes have a wedge shape when viewed in cross section, and $L > 2t$ where L is the length of the above-mentioned wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape.

(Claim 3)

G. The ceramic electronic part according to Claim 1 or Claim 2, wherein the above-mentioned ceramic sintered body is constructed using a dielectric ceramic, and the above-mentioned plurality of internal electrodes are laminated in the direction of thickness of the ceramic sintered body with ceramic sintered body layers interposed, so that a laminated capacitor is constructed.

(Claim 4)

H. The ceramic electronic part according to any of Claims 1 through 3, wherein the thickness of the above-mentioned internal electrodes is in the range of 3 to 20 μm

(Claim 5)

I. A method for manufacturing a ceramic electronic part in which a plurality of internal electrodes are disposed inside a ceramic sintered body so that these internal electrodes overlap with ceramic sintered body layers interposed, wherein said method comprises:
J. a step in which a conductive paste that is used to construct the internal electrodes is printed on one main surface of a ceramic green sheet,
K. a step in which a plurality of ceramic green sheets on which the conductive paste has been printed and unprinted ceramic green sheets that are disposed above and below the ceramic green sheets on which the conductive paste has been printed are laminated to produce a laminated body, and
L. a step in which a ceramic sintered body is produced by firing the laminated body thus obtained,
N. a ceramic and a conductive paste which are such that the shrinkage rate of the ceramic in the firing process is greater than the shrinkage rate of the internal electrodes are used
M. as the materials constituting the above-mentioned ceramic green sheets and conductive paste, so that the ceramic moves toward the tip ends of the internal electrodes during firing, thus causing the tip ends of the internal electrodes to assume a wedge shape as viewed in cross section, and
O. the electronic part manufacturing method is characterized by the above-mentioned features."

Furthermore, according to the invention of the present patent, the following effect and merit are obtained: namely, "delamination and inter-layer peeling in the ceramic sintered body can be effectively suppressed."

b. Description of Evidence

▶ Exhibit A-1 (Japanese Patent Application Kokai No. H9-190947)

(Claim 1, Paragraph 0022, Paragraph 0010, Figure 1, Paragraph 0036, Claim 4, Paragraph 0019, Paragraphs 0015 through 0018)

Exhibit A-1 describes a ceramic electronic part comprising constituent element A, constituent element C, constituent element D, constituent element E, constituent element F, constituent element G, constituent element H, constituent element I, constituent element J, constituent element K, constituent element L, constituent element M and constituent element O, which are constituent elements of the inventions of Claims 1 through 5 of the present patent, as well as a method for manufacturing this ceramic electronic part.

Specifically, a constituent element corresponding to constituent element A, i.e., "a laminated ceramic electronic part which has a structure in which internal electrodes are laminated in a ceramic element, and which is manufactured by a process in which ceramic green sheets on which internal electrode patterns are disposed are laminated and press-bonded," a constituent element corresponding to constituent element C, i.e., "the ... of the above-mentioned internal electrodes are provided with thin parts that are thinner than the functional parts," and a constituent element corresponding to constituent element E, i.e., "a laminated ceramic electronic part which is characterized by ...," are respectively described in Claim 1 of Exhibit A-1. Furthermore, a constituent element which corresponds to constituent element D, i.e., "... thickness of the functional parts (central parts) of the internal electrodes: 3 μm, ... width of the thin parts of the internal electrodes: 100 μm," is described in paragraph 0022 of Exhibit A-1. Specifically, it is seen that since the width of the thin parts (100 μm) corresponds to L, and the thickness of the function parts (central parts) of the internal electrodes (3 μm) corresponds to t, [the condition] $L > 2t$ is satisfied.

Here, the shape of the internal electrodes having a "wedge shape" in constituent element C and the shape [of the internal electrodes] having "thin parts" in Exhibit A-1 differ in terms of wording. However, if reference is made to the description of the "Operation" in paragraph 0010 of Exhibit A-1, i.e., [a description indicating that] "... as a result of the formation of thin parts that have a smaller thickness than the functional parts ..., the internal electrodes become thinner in a stepwise manner, so that the formation of a large step difference between the end portions of the internal electrodes and the corresponding gap parts ... can be securely suppressed. Accordingly, the occurrence of internal defects such as delamination can be prevented, ... and a highly reliable laminated ceramic electronic part can be obtained," then both constituent elements are constituent elements that have the same function used to achieve the same object, so that it is appropriate to consider these constituent elements to be substantially the same. In terms of wording as well, "wedge shape" may be interpreted as one type of "thin part"; accordingly, "thin part" is a broad concept that includes "wedge shape," so that "wedge shape" and "thin part" should be appropriately viewed as being substantially the same. It is true that Figure 1 of Exhibit

A-1 only shows "thin parts" with a step-form shape that become thinner in a stepwise manner; however, a case in which the number of steps of this step-form shape is increased corresponds to a "wedge shape." Accordingly, it is clear that there is no substantial difference between the two [shapes].

There is no direct description of constituent element B in Exhibit A-1. However, the invention of Claim 1 of the present patent is an "invention of a product" as a "ceramic electronic part," and constituent element B is a limitation relating to the "shrinkage rate of the ceramic during firing," which includes a temporal element that is essentially unrelated to the "configuration following firing," which is the final configuration as a "product," so that it is appropriate to conclude that this constituent element is not essential as a constituent element for specifying the "invention of a product."

This is clear from the fact that the patentee himself claims that the judgement of an "invention of a product" should be based on the final configuration even in cases where (for example) this specifies an invention relating to a cited example, as [indicated by the following description] in the section titled "(4) Detailed Reasons Why the Invention of the Present Application Could Not Easily Be Invented from the Cited Examples" in the Opinion Brief submitted to the Patent Office in response to the Notification of Reasons for Rejection:

> "The examiner indicates that while the tip end portions of the internal electrodes are formed as thin parts in the cited example, this is not a case in which the green sheets are formed into a shape that conforms to the internal electrode pattern by the firing and pressing of the laminated body so that a step difference can be maintained, and [the shape] is interpreted as being substantially a 'wedge shape.' However, Figure 1 in Cited Example 1 shows only the cross-sectional structure of the ceramic sintered body following firing; in the construction described in the cited example, the tip ends of the internal electrodes do not have a wedge-shaped cross-sectional structure, and are merely tip ends in which thin parts 2a are formed via steps."

Furthermore, this is also clear from the fact that it is indicated by the following description in the section titled "Effect of the Invention" in paragraph 0045 of the specification of the present patent that it is sufficient if the shape of the internal electrodes is a "wedge shape," regardless of the "shrinkage rate":

> "In the ceramic electronic part of the invention described in Claim 1, the tip-end edges of the internal electrodes have a wedge shape when viewed in cross section, and are set so that $L > 2t$ where L is the length of the wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape. Accordingly, delamination and inter-layer peeling in the ceramic sintered body can be effectively suppressed."

Furthermore, the unclearness of the description regarding the "shrinkage rate" itself in the specification of the present patent will be described later.

Moreover, in the section titled "Effect of the Invention" in paragraph 0036 of Exhibit A-1, it is indicated that operational effects similar to those of the invention of Claim 1 of the present patent are manifested, i.e., "since thin parts that are thinner than the functional parts are formed, internal defects such as delamination caused by insufficient adhesion can be securely prevented."

In regard to the invention of Claim 2 of the present patent, a constituent element corresponding to constituent element F is described in Claim 4 of Exhibit A-1 as follows:

> "characterized by the fact that the above-mentioned thin parts are also formed on the end portions of the above-mentioned internal electrodes on the sides parallel to the lead-out direction of the internal electrodes (on both sides of the internal electrodes with respect to the direction of width)."

In regard to the invention of Claim 3 of the present patent, a constituent element corresponding to constituent element G is described in paragraph 0019 of Exhibit A-1 as follows:

> "The laminated ceramic capacitor shown in Figure 1 is a laminated ceramic capacitor that has a structure in which first internal electrodes 2a which are led out at one end to one end surface of the element (ceramic element) 3, ..., second internal electrodes 2b which face the first internal electrodes 2a via ceramic layers and which are led out at one end to the opposite end surface of the element 3 from the end surface to which the first internal electrodes 2a are led out, and ... are alternately laminated in a ceramic 1."

In regard to the invention of Claim 4 of the present patent, a constituent element corresponding to constituent element H is described in paragraph 0022 of Exhibit A-1 as follows:

> "Furthermore, the dimensions and number of layers of the laminated ceramic capacitor shown in Figure 1 (sample No. 9 in Table 1 below) are as follows: ..., thickness of the functional parts (central portions) of the internal electrodes: 3 μm, ..."

In regard to the invention of Claim 5 of the present patent, constituent elements corresponding to constituent element I, constituent element J, constituent element K, constituent element L, constituent element M and constituent element O are described in paragraphs 0015 through 0018 of Exhibit A-1 (the description is consolidated below):

> "[Manufacture of Laminated Ceramic Capacitor][3] First, ... a ceramic green sheet with a thickness of 7 μm was produced. Then, a ceramic green sheet (mother sheet) having a plurality of electrode patterns was formed by printing a conductive paste into a pattern having specified dimensions, shape and thickness on the above-mentioned ceramic green sheet and then drying this paste. .... Then, a plurality of ceramic green sheets (mother sheets) on which such internal electrodes had been formed were stacked and press-molded under specified conditions, after which this [assembly] was cut so that individual unfired elements were cut out. Next, these unfired elements were fired under specified conditions, and external electrodes were formed, so that laminated ceramic capacitors of the type shown in Figures 1 and 2 were obtained. ...."

There is likewise no direct description in Exhibit A-1 regarding constituent element N in Claim 5 of the present patent. However, as in the case of constituent element B, the causal relationship of constituent element N ("shrinkage rate") and constituent element M ("wedge shape") as constituent elements is unclear in the specification of the present patent, and there is absolutely no numerical support or description of measurement methods regarding the "shrinkage rate" in the "working configurations" or "embodiments," and absolutely no description regarding the directionality of this ["shrinkage rate"] (generally, as is indicated in Exhibit A-7 described later, the "shrinkage rate" differs between the planar direction (longitudinal/lateral direction (X/Y direction) and direction of thickness (Z direction)). Consequently, for these and other reasons, it

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[3] Translator's note: These brackets and the text contained in them (i.e., "[Manufacture of Laminated Ceramic Capacitor]") actually appear in the cited Japanese text and are not insertions of the translator.

is appropriate to conclude that "shrinkage rate" in constituent element B^4 is an extremely vague and meaningless limitation, and that constituent element B^4 is not an essential constituent element for specifying the invention.

Accordingly, since the inventions of Claims 1 through 5 of the present patent are essentially the same inventions as the inventions described in Exhibit A-1, these inventions are subject to Section 29 (1) (iii) of the Patent Law, and cannot be patented.

Furthermore if Exhibits A-3 through A-6 (described later) are taken into account, [it is clear that] the inventions of Claims 1 through 5 of the present parent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which these inventions belong on the basis of the inventions described in Exhibit A-1. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

▶ Exhibit A-2 (ISHM '92 PROCEEDINGS "Application of Low Temperature Fired Multilayered Substrates to High Frequency," pp. 263-268, held 19-21 October 1992)

(Abstract on page 263, Photograph 4, pages 267-268)

Exhibit A-2 describes a ceramic electronic part comprising constituent element A, constituent element C, constituent element D and constituent element E, which are constituent elements of the invention of Claim 1 of the present patent.

Specifically, a constituent element corresponding to constituent element A, indicating that "[the invention] is a noise filter consisting of an LFC (low-temperature fired ceramic) and silver internal electrodes (inner-layer conductors) formed in multiple layers inside this ceramic" is described in the abstract on page 263 of Exhibit A-2. Furthermore, it is indicated in Photograph 4 (a description of which is found on pages 267 and 268) that the tip-end edges of the internal electrodes are constructed so that these edges have a wedge shape (i.e., so that these edges correspond to constituent element C) when viewed in cross section. Moreover, it is indicated in Photograph 4 that $L > 2t$ (corresponding to constituent element D), where L is the length of the wedge shape, and t is the thickness of the internal electrodes in the base portion of the wedge shape. Specifically, it is indicated by an enlarged Photograph 4 (Reference Material 1) appended to Exhibit A-2 that the cross-sectional shape is a wedge shape, that L can be read as 8.5 mm, and that t can be read as 3.2 mm, so that $L > 2t$.

Furthermore, a constituent element corresponding to constituent element E, which indicates that "[the invention] is a noise filter characterized by the above-mentioned features" is described in the abstract on page 263, and on pages 267 and 268. Moreover, in the abstract on page 263, it is indicated that operational effects corresponding to those of the invention of Claim 1 of the present patent, i.e., "... superior in terms of the removal of noise from the signal, as well as being

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[4] Translator's note: probable error for "constituent element N" in the original (same below in this paragraph).

compact and superior in terms of surface mounting characteristics," are manifested, a prerequisite for which is the secure prevention of internal defects such as delamination.

The situation in regard to constituent element B ("shrinkage rate") is the same as in the case of Exhibit A-1; in particular, however, a ceramic electronic part in which a plurality of internal electrodes that have a "wedge shape" and that satisfy the condition $L > 2t$ are laminated is clearly shown in Photograph 4 of Exhibit A-2. Therefore, it is clear that internal electrodes that have such a "wedge shape" are a technical matter that was well known to persons skilled in the art from a time preceding the filing of the application for the present patent, regardless of whether or not the "shrinkage rate" is taken into account.

Accordingly, the invention of Claim 1 of the present patent, as well as [the inventions of] Claims 2 through 5, are inventions that are substantially the same as the inventions described in Exhibit A-2; consequently, these inventions are subject to Section 29 (1) (iii) of the Patent Law, and cannot be patented.

Furthermore, if Exhibits A-3 through A-6 (described later) are taken into account, [it is clear that] the inventions of Claims 1 through 5 of the present patent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which these inventions belong on the basis of the inventions described in Exhibit A-2. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

▶ Exhibit A-3 (ISHM '92 PROCEEDINGS "High Reliability Copper MCM Systems," pp. 607-612, held 19-21 October 1992)

(Abstract on page 607, Figure 2 (Copper Process))

Exhibit A-3 describes a ceramic multi-chip module (MCM) using internal electrodes (copper electrodes) comprising constituent element C and constituent element D of the invention of Claim 1 of the present patent.

Specifically, in the abstract on page 607 and Figure 2 (copper process) of Exhibit A-3, it is indicated that the cross-sectional shape of internal electrodes (copper electrodes in a crystallized dielectric) used in a ceramic multi-chip module (MCM), which is the same technical field as that of the inventions of the present patent, is a wedge shape, and that [these internal electrodes] are constructed so as to satisfy [the condition] $L > 2t$ (i.e., so as to correspond to constituent element C and constituent element D). Specifically, Figure 2 (copper process) appended to Exhibit A-3 (Reference Material 2) indicates that the cross-sectional shape is a wedge shape, that L can be read as 20.0 mm, that t can be read as 4.0 mm, and that $L > 2t$. As in the case of Exhibit A-2, it is clear that internal electrodes that have such a "wedge shape" were well known to persons skilled in the art at the time that the application for the present patent was filed.

▶ Exhibit A-4 (ISHM '94 PROCEEDINGS "Multifunctional Ceramic Substrates and Packages for Telecommunication Applications," pp. 243-247, held 15-17 November 1994)

(Abstract on page 243, Figure 2b)

Exhibit A-4 describes a multi-layer ceramic substrate (MLCS) using internal electrodes (tungsten conductors) comprising constituent element C and constituent element D of the invention of Claim 1 of the present patent.

Specifically, in the abstract on page 243 and Figure 2b of Exhibit A-4, it is indicated that the cross-sectional shape of internal electrodes (tungsten conductors) that are used in a multi-layer ceramic substrate (MLCS), which is the same technical field as that of the inventions of the present patent, and which is constructed from an alumina-type substrate and tungsten conductors, is a wedge shape, and that [these internal electrodes] are constructed so as to satisfy [the condition] $L > 2t$ (i.e., so as to correspond to constituent element C and constituent element D). Specifically, Figure 2b (Reference Material 3) appended to Exhibit A-4 indicates that the cross-sectional shape is a wedge shape, that L can be read as 24 mm, that t can be read as 10 mm, and that $L > 2t$. As in the case of Exhibit A-2 and Exhibit A-3, it is clear that internal electrodes that have such a "wedge shape" were well known to persons skilled in the art at the time that the application for the present patent was filed.

⑤ Exhibit A-5 (Japanese Patent Application Kokai No. H7-142904)

(Claim 34, Paragraph 0013)

Exhibit A-5 describes a dielectric laminated filter which uses internal electrodes comprising constituent element B of the invention of Claim 1 of the present patent.

Specifically, a constituent element corresponding to constituent element B is described in Claim 34 of Exhibit A-5 as follows (constituent element A and constituent element E are also described in Exhibit A-5):

> "A dielectric laminated filter which is characterized by the fact that stripline resonator electrodes and a shielding electrode are respectively formed on a plurality of dielectric sheets using an electrode material whose shrinkage rate during firing is smaller than that of the above-mentioned dielectric sheets, and these dielectric sheets are laminated and integrally fired."

The significance of forming such a construction is described in paragraph 0013 as follows:

> "The dielectric sheets and the respective electrode layers shrink and are reduced in size by several 10% each in the vertical and horizontal directions as a result of firing. If the shrinkage rate of the electrode layers is greater than the shrinkage rate of the dielectric sheets, the electrode terminals are retracted inward on the end surfaces of the laminated body, so that the connection to the terminal electrodes formed on the side surfaces becomes impossible. ...."

In other words, the directionality in the vertical and horizontal directions which is required for specifying the invention ("shrinkage rate") is also described here (there is no description whatsoever in the specification of the present patent). Since the "shrinkage rate" in three dimensions is the issue in regard to constituent element B, in addition to the vertical and

horizontal directions, the directionality regarding the direction that is perpendicular to these directions is also required ([the shrinkage rate] is generally different in the planar direction (longitudinal/lateral direction (X/Y direction)) and the direction of thickness (Z direction) as indicated in Exhibit A-7 described later). However, absolutely no description is given, and this alone shows how vague and meaningless the limitation of the "shrinkage rate" in constituent element B is without specifying directionality.

Furthermore, from this description of Claim 34 of Exhibit A-5, it is clear that consideration of the "shrinkage rate" between the ceramic and internal electrodes in a ceramic electronic part is a technical matter that has been well known to persons skilled in the art from the time that the application for the present patent was filed.

⑥ Exhibit A-6 (Japanese Patent Application Kokai No. H7-297074)

(Paragraph 0005 through Paragraph 0007)

The invention described in Exhibit A-6 aims at manifesting similar effects to those of the invention of Claim 1 of the present patent, and when [the description in] paragraph 0005 through paragraph 0007 of Exhibit A-6 is considered, it is clear that consideration of the "shrinkage rate" between the ceramic and internal electrodes in a ceramic electronic part is a technical matter that has been well known to persons skilled in the art from the time that the application for the present patent was filed.

Specifically, from the following description in paragraphs 0005 through 0007 of Exhibit A-6 (the description is consolidated below), it is clear that considering the "shrinkage rate" in order to prevent the generation of delamination or the like in this type of ceramic electronic parts is a technical matter that has been well known to persons skilled in the art from the time that the application for the present patent was filed:

> "The object of the present invention is to provide a laminated ceramic electronic part that is free of defects such as defective lamination, delamination (inter-layer peeling) and cracking, by increasing the shrinkage rate of a ceramic sheet following pressing, and eliminating the difference in thickness between the central portion and peripheral portions of the laminated body caused by the internal electrodes. In order to achieve this object, in the present invention, the volume occupied by ceramic powder in a ceramic sheet is set at 60% or less, and the film thickness is increased by increasing the contained air. By forming the above-mentioned construction, the shrinkage rate of a ceramic sheet following pressing is increased, so that unevenness at the central portion and peripheral portions of the laminated body caused by the internal electrodes is absorbed, thus making it possible to prevent the generation of defects such as defective lamination, delamination (inter-layer peeling) and cracking."

Furthermore, even though the "shrinkage rate" of the internal electrodes described in Exhibit A-6 does not correspond to constituent element B in a strict sense (the "shrinkage rate" described in Exhibit A-6 is the "shrinkage rate following pressing"), it is very clearly indicated that consideration of the "shrinkage rate" between the ceramic and internal electrodes not only "during firing" as in constituent element B, but also this consideration in itself in order to avoid

delamination or the like in a ceramic electronic part is a technical matter that was well known to persons skilled in the art at the time that the application for the present patent was filed.

Thus, if Exhibit A-3 through Exhibit A-6 are taken into account, the inventions of Claims 1 through 5 of the present patent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which the inventions belong based on the inventions respectively described in Exhibit A-1 and Exhibit A-2. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

⑦ Exhibit A-7 (ISPS '97 PROCEEDINGS "A Low Temperature Co-Fire Ceramic Materials System for High Performance Commercial Applications," pp. 135-140, held 2-5 December 1997)

(Abstract on page 135; page 137, left column, lines 6 through 8; Table 1)

It is indicated in Exhibit A-7 that the firing shrinkage rate of a green sheet is generally different in the planar direction (longitudinal/lateral direction (X/Y direction)) and the direction of thickness (Z direction). Specifically, there is a description in lines 6 through 8 in the left column of page 137 stating that "Table 1 shows dielectric characteristics of the LTCC tape when silver conductors are used," and Table 1 shows the shrinkage rate in the X/Y direction and the shrinkage rate in the Z direction, and indicates that the shrinkage rate in the Z direction is more than twice of the shrinkage rate in the X/Y direction. From this, it is seen how vague and meaningless the limitation of the "shrinkage rate" in constituent element B is without specifying directionality.

c. Comparison between the Inventions of the Present Patent and Evidence

Comparison between the Inventions of the Present Patent and the Inventions Described in Exhibit A-1 and Exhibit A-2:

When the invention of Claim 1 of the present patent and the inventions described in Exhibit A-1 are compared, as is described above, [it is seen that] Exhibit A-1 describes a ceramic electronic part comprising constituent element A, constituent element C, constituent element D, constituent element E, constituent element F, constituent element G, constituent element H, constituent element I, constituent element J, constituent element K, constituent element L, constituent element M and constituent element O, which are constituent elements of the inventions of Claims 1 through 5 of the present patent, as well as a method for manufacturing this ceramic electronic part. Furthermore, Exhibit A-2 describes a ceramic electronic part comprising constituent element A, constituent element C, constituent element D and constituent element E, which are constituent elements of the invention of Claim 1 of the present patent.

The issue here involves constituent element C and constituent element B. As was described above, the shape of the internal electrodes having a "wedge shape" in constituent element C and the shape [of the internal electrodes] having "thin parts" in Exhibit A-1 differ in terms of

wording. However, if reference is made to the description of the "Operation" in paragraph 0010 of Exhibit A-1, both constituent elements are constituent elements that have the same function used to achieve the same object, so that it is appropriate to consider these constituent elements to be substantially the same. In terms of wording as well, "wedge shape" may be interpreted as one type of "thin part;" accordingly, "thin part" is a broad concept that includes "wedge shape," so that "wedge shape" and "thin part" should be appropriately viewed as being substantially the same. It is true that Figure 1 of Exhibit A-1 only shows "thin parts" with a step-form shape that become thinner in a stepwise manner; however, a case in which the number of steps of this step-form shape is increased corresponds to a "wedge shape." Accordingly, it is clear that there is no substantial difference between the two [shapes]. Constituent element C is clearly indicated in Exhibit A-2.

Furthermore, there is no direct description of constituent element B in Exhibit A-1 and Exhibit A-2. However, the invention of Claim 1 of the present patent is an "invention of a product" as a "ceramic electronic part," and the judgement of an "invention of a product" should be based on the final shape, configuration, characteristics, and the like of the product. However, constituent element B is a limitation relating to the "shrinkage rate of the ceramic during firing," which includes a temporal element that is essentially unrelated to the "configuration following firing," which is the final configuration as a "product," so that it is appropriate to conclude that [this constituent element] is not essential as a constituent element for specifying the "invention of a product." As was described above, this is clear from the description of the Opinion Brief submitted to the Patent Office by the patentee in response to the Notification of Reasons for Rejection and from the description in the section titled "Effect of the Invention" in paragraph 0045 of the specification of the present patent.

Thus, constituent element B cannot possibly be essential as a constituent element for specifying the invention, and it is appropriate to conclude that the substantial sameness of the invention of Claim 1 of the present patent and the inventions respectively described in Exhibit A-1 and Exhibit A-2 is not hindered in any way just because there is no direct description of constituent element B in Exhibit A-1 and Exhibit A-2.

Accordingly, the inventions of Claims 1 through 5 of the present patent are substantially the same as the inventions respectively described in Exhibit A-1 and Exhibit A-2, and these inventions are therefore subject to Section 29 (1) (iii) of the Patent Law, and cannot be patented. Moreover, even if the substantial sameness of the inventions of Claims 1 through 5 of the present patent and [the inventions described in] Exhibit A-1 and Exhibit A-2 is confuted using a lack of constituent element B as a ground, when Exhibits A-3 through A-6 are taken into account, [it is seen that] the inventions of Claims 1 through 5 of the present patent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which the inventions belong based on the inventions respectively described in Exhibit A-1 and Exhibit A-2. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

d. Regarding the Unclearness of the Invention of Claim 1 of the Present Patent

Since the "selection of the shrinkage rate (the ceramic that constitutes the ceramic sintered body is selected so that the shrinkage rate of the ceramic during firing is greater than the shrinkage rate of the internal electrodes)" in constituent element B is not clearly or sufficiently described in the specification of the present patent; accordingly, this is extremely unclear. Specifically, in the specification of the present patent, the causal relationship between constituent element B (constituent element N) ("shrinkage rate") and constituent element C (constituent element M) ("wedge shape") as constituent elements (i.e., the question of whether it is sufficient if the shape of the internal electrodes is a "wedge shape" in order to manifest the effect [of the invention] as an "invention of a product," or whether the condition of the "shrinkage rate" must also be satisfied, and the question what type of relationship exists between these two [constituent elements]) is unclear (as was described above, in the section titled "Effect of the Invention" in paragraph 0045 of the specification of the present patent, it is indicated that it is sufficient if the shape of the internal electrodes is a "wedge shape," regardless of the "shrinkage rate" as described above). Furthermore, in regard to the "shrinkage rate," absolutely no backing in terms of numerical values is given in the "working configurations" or "embodiments," and there is absolutely no description of the directionality of this "shrinkage rate" even though [the "shrinkage rate"] generally differs in the planar direction (longitudinal/lateral direction (X/Y direction)) and the direction of thickness (Z direction). In paragraph 0026 of the specification of the present patent, only two examples are cited as methods for making the shrinkage rate of the ceramic greater than the shrinkage rate of the internal electrodes, and there is no concrete description whatsoever regarding the "shrinkage rate" as the specification of an entity in an "invention of a product" (e.g., a description in terms of numerical values or a description regarding measurement methods, etc.). In regard to the measurement methods, in particular, kinds of conditions under which an object of measurement is measured are important (for example, measurement methods and measured values should be different depending on whether the object of measurement is a green sheet or a printed film body); however, no disclosure or suggestion of this issue is given in the specification of the present patent. The following description appears in paragraph 0029 of the specification of the present patent as the description of an embodiment:

> "In order to obtain a ceramic sintered body 2, a rectangular ceramic green sheet was molded using a ceramic slurry that mainly consists of a low-temperature sintering ceramic ($CaZrO_3$ + glass material) type of ceramic powder. A conductive paste with a composition ratio of 3.0 wt. % organic binder to 100 wt. % Cu powders having a mean particle diameter of 1.0 μm was screen-printed on this ceramic green sheet in order to form internal electrodes 3 through 6. Then, a laminated body was obtained by laminating a plurality of ceramic green sheets on which the conductive paste had been printed, and overlaying the above-mentioned unprinted ceramic green sheets above and below [the printed ceramic green sheets] and pressing [this lamination] in the direction of thickness. This laminated body was fired at a temperature of 1000°C, and a ceramic sintered body 2 of $1.6 \times 0.8 \times 0.8$ mm is produced. Furthermore, the number of laminations of the internal electrodes was four."

When conditions of the object of measurement are derived from this embodiment, a ceramic is a laminated body in which green sheets are laminated, and the internal electrodes constitute an extremely thin printed film body with a thickness of 3 μm (see paragraph 0031); however, there are cases in which the shrinkage rate of a ceramic which is such lamination of green sheets differs from the shrinkage rate of green sheets that are not laminated. Furthermore, the shrinkage rate of the internal electrodes constituting a film body cannot be measured independently as an actual printed unit, so that the values fluctuate depending on the measurement methods used. From this as well, it is seen how unclear the description of constituent element B is in which the "shrinkage rate" is a required element.

Moreover, the above-mentioned two examples of the methods for making the shrinkage rate of the ceramic greater than the shrinkage rate of the internal electrodes are both merely methods for adjusting the conductive paste that forms the internal electrodes; in regard to the "ceramic," only one example relating to the low-temperature sintering ceramic is described. Furthermore, considering the meaning of the description in paragraph 0028 stating that "of course, the adjustment of the composition of the above-mentioned internal electrodes is selected in accordance with the shrinkage rate of the ceramic used, ...," in order to consider the relative magnitudes of the "shrinkage rates" of the ceramic and internal electrodes by comparing these rates, there must be a concrete description of numerical values or measurement methods, etc., in regard to the "shrinkage rate of the ceramic" itself, which serves as a standard in cases where the composition of the internal electrodes is adjusted. However, in the specification of the present patent, there is absolutely no concrete description of the "shrinkage rate of the ceramic" itself, so that this is extremely unclear in terms of specifying the invention or working the invention.

Accordingly, the invention of Claim 1 of the present patent does not satisfy the conditions stipulated in Section 36 (4) and (6) (ii) of the Patent Law, and therefore cannot be patented.

(5) Conclusion

▶ The inventions of Claims 1 through 5 of the present patent are substantially the same as the inventions respectively described in Exhibit A-1 and Exhibit A-2, which were publicly known prior to the filing of the application of the present patent. Accordingly, these inventions are subject to the provisions of Section 29 (1) (iii) of the Patent Law, and cannot be patented.

▶ If Exhibit A-3 through Exhibit A-6 are taken into account, the inventions of Claims 1 through 5 of the present patent are inventions that could easily have been invented by a person possessing ordinary knowledge in the technical field to which the inventions belong based on the inventions respectively described in Exhibit A-1 and Exhibit A-2. Accordingly, these inventions are subject to the provisions of Section 29 (2) of the Patent Law, and cannot be patented.

▶ The invention of Claim 1 of the present patent does not satisfy the conditions stipulated in Section 36 (4) of the Patent Law and Section 36 (6) (ii) of the Patent Law. Accordingly, this invention cannot be patented.

Consequently, the inventions of Claims 1 through 5 of the present patent should be nullified in accordance with the provisions of Section 113 (1) (ii) of the Patent Law and Section 113 (1) (iv) of the Patent Law.

4. Evidence

(1) Exhibit A-1: Japanese Patent Application Kokai No. H9-190947

(2) Exhibit A-2: ISHM '92 PROCEEDINGS "Application of Low Temperature Fired Multilayered Substrates to High Frequency," pp. 263-268, held 19-21 October 1992

(3) Exhibit A-3: ISHM '92 PROCEEDINGS "High Reliability Copper MCM Systems," pp. 607-612, held 19-21 October 1992

(4) Exhibit A-4: ISHM '94 PROCEEDINGS "Multifunctional Ceramic Substrates and Packages for Telecommunication Applications," pp. 243-247, held 15-17 November 1994

(5) Exhibit A-5: Japanese Patent Application Kokai No. H7-142904

(6) Exhibit A-6: Japanese Patent Application Kokai No. H7-297074

(7) Exhibit A-7: ISPS '97 PROCEEDINGS "A Low Temperature Co-Fire Ceramic Materials System for High Performance Commercial Applications," pp. 135-140, held 2-5 December 1997

(8) Reference Material 1 (the relationship between L and t in an enlarged Photograph 4 of Exhibit A-2)

(9) Reference Material 2 (the relationship between L and t in Figure 2 (Copper Process) of Exhibit A-3)

(10) Reference Material 3 (the relationship between L and t in Figure 2b of Exhibit A-4)

5. List of Appended Documents or Appended Items

(1) Copy of Exhibit A-1: One original and two duplicates

(2) Copy of Exhibit A-2: One original and two duplicates

(3) Copy of Exhibit A-3: One original and two duplicates

(4) Copy of Exhibit A-4: One original and two duplicates

(5) Copy of Exhibit A-5: One original and two duplicates

(6) Copy of Exhibit A-6: One original and two duplicates

(7) Copy of Exhibit A-7: One original and two duplicates

(8) Translation of Exhibit A-2 through Exhibit A-4 and Exhibit A-7: One original and two duplicates

(9) Copy of Reference Materials 1 through 3: One original and two duplicates

(10) Patent Opposition Statement: Two duplicates

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From: Murata Patent [patent@murata.co.jp]
Sent: Monday, December 16, 2002 2:55 AM
To: A1714
Subject: Notice

Dear Sir and Madam,

Please note that our offices will be closed
during the following days for our holiday:

December 21, 2002 (Saturday) to December 23, 2002 (Monday)

Thank you for your cooperation.

Sincerely yours,

Noriko Ono
(A170) Intellectual Property Department
Murata MFG. Co., Ltd.